TO BE THINKERS NOT JUST SPECIALISTS

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2018 INTAKE IORA PHD STUDENTS
NAJAKORN & ATLANTA

At Institute of Operations Research and Analytics, we develop our PhD students by leverage and mobilize NUS’ existing strengths in various diverse discipline to create integrated capabilities in modelling and computation. Our new multi-disciplinary academic program that focuses on the development of new foundations and methods to address these complex societal and business problems, using Operations Research and Analytical tools.

Through our research programs, students able to conduct cutting-edge basic and applied research on the optimization, analysis and management of the service systems include model formulation, algorithm design, analysis of the service strategies and software development.

Najakorn & Atlanta is our 2nd batch of students from the 2018 Intake. They will be given multiple opportunities to learn and explore, as well as the confidence which will grow in their ability to pick up new things quickly.
Najakorn is our 2018 intake PhD Student. She was invited to present her paper at the Bank of Thailand’s Setthatat Award recently and won 2nd runner up. We sat down with her to find out how she copes with managing studies and research at the same time.

What motivates you to be so active despite holding multiple portfolios of having to study full time and doing research?

It is definitely not easy juggling a lot of things at the same time, but knowing that they all would lead me to where I want to be and that it is something that I am passionate about have pushed me to keep going.

"RUNNER-UP FOR BANK OF THAILAND'S SETTHATAT AWARD"

Can you give us one tip for those who want to contribute to the field of research?

I am still a newbie researcher, I don’t think I can give any useful tip. Read a lot?, maybe.
WHAT DOES IT MEAN TO YOU TO RECEIVE THE INVITATION TO PRESENT YOUR PAPER AT THE BANK OF THAILAND’S SETTHATAT AWARD?

Being nominated for the Setthatat Award and being invited to present my paper at the Bank of Thailand were something I’d always hoped to achieve. Not only did it give me a chance to present my paper to top economists and researchers in Thailand, from my peers I also received many insightful comments, questions, and suggestions, that have motivated me to improve and work harder in my future researches.
Atlanta is our 2018 intake PhD Student. She was invited to present her paper at the 51st Annual convention of ORSI and International Conference. We sat down with her to find out how she copes with managing studies and research at the same time.

How do you feel that you are given the opportunity to present your research at the 51st Annual convention of ORSI and International Conference?

This was my first presentation at an international conference. It felt amazing to know that my work could contribute to further research scope in the area of healthcare.
The essence of doing a PhD lies in the quality of research. Although it is difficult coping up with multiple courses and research work simultaneously. These courses make our foundations stronger and enable us to understand our research papers better. The bigger picture is what drives me in trying to manage both.

WHAT MOTIVATES YOU TO BE ACTIVE IN RESEARCH DESPITE HAVING TO STUDY FULL TIME PHD PROGRAMME?

WHAT ADVICE COULD YOU GIVE TO THOSE WHO WISH TO EMBARK ON THE PHD JOURNEY?

I don’t have much to say since I am myself only starting out my journey, but I would stress on the fact that we need to be open to all subjects of research, and not limit ourselves to any one particular subject.
During the launch, our executive director Prof Teo Chiew Piaw showcase how IORA tap on tap its highly skilled pool of graduate students, post-doctoral researchers and staff to conduct research on cutting-edge basic and applied research on the optimization analysis and management of the service systems.

Our research fellow Mr Herman Tan presented how we employed cutting-edge technologies methods that will give companies sustained advantage over incumbents or create new markets in the operation research field.
MOVING TO INNOVATION 4.0

INSTITUTE OF OPERATIONS RESEARCH AND ANALYTICS
MOVE TO INNOVATION 4.0

FROM MAY 2018 WE OPERATED FROM OUR NEW OFFICE IN INNOVATION 4.0 (3 RESEARCH LINK) #04-01/02

ABOUT INNOVATION 4.0 BUILDING

Formerly known as A*STAR’s Institute of Materials Research & Engineering (IMRE) building, the new i4.0 is a fully refurbished 6-storey R&D cluster sited in the core of the University’s research precinct. The new i4.0 will support the strategic research programmes helmed by the Office of the Deputy President (Research & Technology) through steering initiatives from Singapore’s Smart Nation Programme, and is envisioned to be the heart of the University’s research and development cluster for data science, cybersecurity and analytics, fostering new solutions in the innovation of Smart Mobility, Smart Living, Digital Health and Social Connectivity.

Spanning across 2 office—Main Office and Research Office. It provides maximum floor-to-ceiling window fenestration, interior greenery and open-plan office spaces that offers flexibility for social, creative and collaborative work environments.

Our Main Office house our PhD Students while our Research Office house our research Fellows for their research work discussion done in open-plan office spaces that offers flexibility for social, creative and collaborative work environments.
On September 28th and 29th, "Data Driven Prescriptive Analytics" was held in National University of Singapore (Innovation 4.0). The workshop was hosted by Institute of Operations Research and Analytics and a number of well-known Professors from NUS Business School and University of Science and Technology of China (USTC) were invited to attend the event.

In the morning of September 29th, the opening ceremony of the workshop was held in the innovation 4.0, officiated by Prof Teo Chung Piaw, Executive Director of Institute of Operations Research and Analytics. At the opening, Prof Teo Chung Piaw of National University of Singapore and YU Yugang, Dean of School of Management, USTC jointly unveiled the 3rd workshop between USTC and NUS.

From the morning of 28th to evening 29th Sept, Prof. TEO Chung Piaw and Hanqin Zhang from the National University of Singapore chair the sessions which introduced the application of big data in operations research, resource allocation, fresh retail and other fields. Prof. YU Yugang and Prof. XIE Jingui from USTC introduced the application of big data in the field of logistics and optimization of medical resources distribution. Some scholars analyzed the examples of big data in the optimization of decision-making applications.
LAST MILE DELIVERY INNOVATION IN URBAN LOGISTICS

This research program uses Operations Research and Analytics to understand the impact of the smart lockers on urban logistics in Singapore.

As a public infrastructure project, the Federated Locker System needs to first serve the general public (i.e. residents living in public housing blocks), but this egalitarian consideration may undermine the commercial objective of this infrastructure, which is to attract as much usage of the lockers as possible. What are the trade-offs in these considerations?

We show that the reduction in efficiency can be negligible with the incorporation of the fairness consideration, provided the fairness criterion and the scale of the system are appropriately chosen. To see this, we develop locker choice models and carefully calibrate the parameters to predict the volume of parcels that the infrastructure can attract to the system, after accounting for demand endogeneity in the calibration study. Excessive scale however will reduce average utilization per locker. Right-sizing the Federated Locker System appears to be vital for this new concept in the last mile delivery domain.

To level the playing field, and to streamline the flows of parcels into crowded housing districts, the Singapore Government has recently announced its plan to roll out a federated locker system. This will be outsourced to commercial operators to manage, but open to all parcel delivery companies, making it the first country to do such large scale deployment of common parcel lockers at a national level.

This is a bold move, and hopefully will allow many logistics companies to break away from the lack of scale in their respective business models to offer seamless parcel delivery services to their customers and to reduce the cost of parcel delivery operations for these companies. The latter comes from the fact that deliverymen’s productivity can be enhanced 3 to 4 folds with the federated locker system, since many of the door-to-door deliveries can now be bundled together and delivered to a single locker station.
IORA invites the public to participate in 3 future surveys on online shopping, parcel delivery experience and use of lockers. You will be eligible to participate if you are above 18 years old, live in Punggol or Bukit Panjang and are a frequent online shopper.

Follow this link for more info and to participate in the survey.